

Valent BioSciences

Foray® 48B

Biological Insecticide

Flowable Concentrate

ACTIVE INGREDIENT:

Bacillus thuringiensis, subsp. *kurstaki*, strain

ABTS-351, fermentation solids and solubles 17.19%

OTHER INGREDIENTS 82.81%

TOTAL 100.00%

Potency: 10,600 International Units (IU/mg) of product (equivalent to 48 billion IU/GAL).

There is no direct relationship between intended activity (potency) and the Percent Active Ingredient by Weight.

EPA Reg. No. 73049-46

EPA Est. No. 33762-IA-001

List No. 60178

KEEP OUT OF REACH OF CHILDREN

CAUTION

1.0 FIRST AID

If on skin or clothing	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.	

2.0 PRECAUTIONARY STATEMENTS

2.1 HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Causes moderate eye irritation. Avoid contact with skin, eyes, open wounds or clothing. Wash thoroughly with soap and water after handling.

2.2 Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

2.3 Agricultural Use Requirements:

Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause all allergic sensitization.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

2.4 Non-agricultural Use Requirements:

Mixer/loaders and applicators not in enclosed cabs or aircraft must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

2.5 USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

2.6 Environmental Hazards

For terrestrial agricultural uses, do not apply directly to water, or to where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

3.0 STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal of waste.

Storage: Store in a cool, dry place. Keep containers tightly closed when not in use. Store in temperatures above freezing and below 32°C (90°F).

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Pesticide Disposal: Pesticide waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility in accordance with federal and local regulations.**Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

4.0 NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of the treated areas until sprays have dried.

5.0 DIRECTIONS FOR USE FOR AGRICULTURAL APPLICATIONS

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product through any type of irrigation system.

6.0 DIRECTIONS FOR USE

7.0 AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

8.0 APPLICATION

Foray 48B may be applied by ground or aerial equipment undiluted or with quantities of water sufficient to provide thorough coverage of plant parts to be protected. The amount of water needed per acre will depend upon crop size, weather, spray equipment, and local experience.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all of these factors when making decisions.

9.0 MIXING

Shake or stir Foray 48B before use. Fill spray or mixing tank half full of water. Begin agitation and pour Foray 48B into water while maintaining continuous agitation. Add other spray material (if any) and balance of water. Agitate as necessary to maintain suspension. Do not allow diluted mixture to remain in the tank for more than 72 hours.

The use of a spreader-sticker approved for use on growing crops is recommended for hard to wet crops such as cole crops or to improve weather-fastness of the spray deposits. Combinations with commonly used spray tank adjuvants are generally not deleterious to Foray 48B, if the mix is used promptly. Before mixing in the spray tank, it is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities.

10.0 SPRAY VOLUMES

Ground Application: Use recommended amount of Foray 48B in ground equipment with quantities of water sufficient to provide thorough coverage of plant parts to be protected. The amount of water needed per acre will depend upon crop size, weather conditions, spray equipment used and local experience.**Aerial Application:** Use recommended amount of Foray 48B in aerial equipment undiluted or with quantities of water sufficient to provide thorough coverage of plant parts to be protected. In the western U.S. 5-10 gallons per acre is the normal minimum; in the eastern regions a minimum of 2-3 gallons is normally used. The minimum amount of water needed per acre will depend upon crop size, weather conditions, spray equipment used and local experience.

11.0 GENERAL AGRICULTURAL USE INSTRUCTIONS

Foray 48B is a biological insecticide for the control of lepidopterous larvae. It contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 48B must be ingested by the larvae to be effective. For consistent control, apply at first sign of newly hatched larvae (1st and 2nd instar larvae). Susceptible larvae that ingest Foray 48B cease feeding within a few hours and die within 2-5 days.

Foray 48B may be applied up to and on the day of harvest.

For maximum effectiveness the following is recommended:

Monitor fields to detect early infestations.

Apply Foray 48B when eggs start hatching and larvae are small (early instars) and before significant crop damage occurs. Larvae must be actively feeding to be affected.

Repeat applications every 3 to 14 days to maintain control and protect new plant growth. Factors affecting spray interval include rate of plant growth, weather conditions, and reinfestation. Monitor populations of pests and beneficials to determine proper timing of applications.

Under conditions of heavy pest pressures or when large worms are present use the higher rate, shorten the application interval, and/or improve spray coverage to enhance control. When these conditions are present, a contact insecticide should be used to enhance control.

Thorough coverage is essential for optimum performance. Ground applicators equipped with directed drop nozzles can improve coverage.

11.1 APPLICATION RATES

Crop	Pests	Rate ¹ (oz./acre)	Dosage ¹ (BIU/acre)
Forests, Shade Trees, Ornamentals, Shrubs, Sugar Maple Trees, Seed Orchards, Ornamental Fruit, Nut and Citrus Trees ²	Gypsy Moth & Asian Gypsy Moth, Elm Spanworm	21-107	8-40
	Spruce Budworm, Browntail Moth, Douglas Fir Tussock Moth, Coneworm, Buck Moth	21-80	8-30
	Tussock Moths, Pine Butterfly, Bagworm, Leafrollers, Tortrix, Mimosa Webworm, Tent Caterpillar, Jackpine Budworm, Blackheaded Budworm, Saddled Prominent, Saddleback Caterpillar, Eastern and Western Hemlock Looper, Orangestriped Oakworm, Satin Moth	16-43	6-16
	Redhumped Caterpillars, Spring and Fall Cankerworm, California Oakworm, Fall Webworm	11-21	4-8

Special Instructions

¹ Use the higher recommended rates on advanced larval stages or under high density larval populations.

² In treating Gypsy Moth and Asian Gypsy Moth infected trees and shrubs in urban, rural, and semi-rural areas, exposure of non-target vegetation including, but not limited to, native and ornamental species and food or feed crops is permitted.

This product can be mixed and used with other pesticides only in accordance with the most restrictive of label limitations and precautions. This product cannot be mixed with any product containing a label prohibition against such mixing. No label dosage rates may be exceeded.

12.0 DIRECTIONS FOR USE FOR NON-AGRICULTURAL APPLICATIONS

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climactic modification and being grown in interior landscapes, ornamental gardens or parks, or on golf courses or lawns and grounds.

Not for use on trees being grown for sale or other commercial use, or for commercial seed production, or for the production of timber or wood products, or for research purposes except wide-area public pest control programs sponsored by government entities, such as mosquito abatement, gypsy moth control, and Mediterranean fruit fly eradication.

Foray 48B contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 48B is a stomach poison and is effective against lepidopterous larvae. After ingestion, larvae stop feeding within hours and die 2-5 days later. Maximum activity is exhibited against early instar larvae. Foray 48B may be used for both ground and aerial application. The product should be shaken or stirred before use. Add some water to the tank mix, pour the recommended amount of Foray 48B into the tank and then add the remaining amount of water to obtain the proper mix ratio. Agitate as necessary to maintain the suspension. The diluted mix should be used within 72 hours.

12.1 APPLICATION

Ground Application: Use an adequate amount of tank mix to obtain thorough coverage without excessive run off. Use the recommended per acre dosages of Foray 48B in up to the following amounts of water:

High volume hydraulic sprayers 100 gallons
Mist blowers 10 gallons

Aerial Application: Foray 48B may be applied aerially, either alone or diluted with water at the dosages shown in the application rates table. Spray volumes of 32-128 ounces per acre are recommended. Best results are expected when Foray 48B is applied to dry foliage.

For smaller spray volumes mix the proper number of teaspoons of Foray 48B from the following chart to attain the desired rates:

If the rate is:	Add this amount per gallon of mix:
0.5 pts./acre	1/2 teaspoon
1.0 pts./acre	1 teaspoon
1.5 pts./acre	1 1/2 teaspoons
2.0 pts./acre	2 teaspoons
3.0 pts./acre	3 teaspoons
4.0 pts./acre	4 teaspoons
5.5 pts./acre	5 1/2 teaspoons

13.0 HOME GARDEN USE DISPOSAL INSTRUCTIONS

Securely wrap original container in several layers of newspaper and discard in trash.

13.1 APPLICATION RATES

Crop	Pests	Rate ¹ (oz./acre)	Dosage ¹ (BIU/acre)
Forests, Shade Trees, Ornamentals, Shrubs, Sugar Maple Trees, Ornamental Fruit, Nut and Citrus Trees ²	Gypsy Moth & Asian Gypsy Moth, Elm Spanworm	21-107	8-40
	Spruce Budworm, Browntail Moth, Douglas Fir Tussock Moth, Coneworm, Buck Moth	21-80	8-30
	Tussock Moths, Pine Butterfly, Bagworm, Leafrollers, Tortrix, Mimosa Webworm, Tent Caterpillar, Jackpine Budworm, Blackheaded Budworm, Saddled Prominent, Saddleback Caterpillar, Eastern and Western Hemlock Looper, Orangestriped Oakworm, Satin Moth	16-43	6-16
	Redhumped Caterpillars, Spring and Fall Cankerworm, California Oakworm, Fall Webworm	11-21	4-8

Home Garden Use Foray 48B may be used for any labeled pest and crop using the rates and mixing instructions in the Directions for Use for Agricultural Applications section and the additional information specified in GENERAL AGRICULTURAL USE INSTRUCTIONS section.

Special Instructions

¹ Use the higher recommended rates on advanced larval stages or under high density larval populations.

² In treating Gypsy Moth and Asian Gypsy Moth infected trees and shrubs in urban, rural, and semi-rural areas, exposure of non-target vegetation including, but not limited to, native and ornamental species and food or feed crops is permitted.

14.0 NOTICE OF WARRANTY

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE CONCERNING THE USE OF THIS PRODUCT OTHER THAN AS INDICATED ON THE LABEL. USER ASSUMES ALL RISKS OF USE, STORAGE OR HANDLING NOT IN STRICT ACCORDANCE WITH ACCOMPANYING DIRECTIONS.

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